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FACTS ON CANADA



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Canada is over 3.8 million square miles in area. It is the second-largest country in the world, covering nearly half the North American continent. There are five major geographical regions.

The Appalachian region in the east includes the Atlantic Provinces and part of southeastern Quebec, and consists of rounded hills and undulating plains.

The St. Lawrence Lowlands are an area of fertile, low-lying land bordering the Great Lakes and St. Lawrence River in southern Quebec and Ontario.

The Canadian Shield is an area of very ancient rock covering about 1.8 million square miles centred on Hudson Bay, extending west and north from the Atlantic Ocean to the Arctic Ocean. It is a region of rounded hills, numerous lakes and muskeg (swamp). The Shield contains a wealth of minerals.

The Interior Plains extend from the Gulf of Mexico to the Arctic Ocean. In Canada, the Shield forms their eastern limit and the Cordilleran region their western limit. In the southern part of the Prairie Provinces, the Plains are unforested and are devoted largely to a grain-growing economy. North of the Prairies, the Plains are forested. The rocks of the Interior Plains contain very important deposits of oil, gas and potash.

The Cordilleran region is a strip of mountainous terrain about 500 miles wide that includes most of British Columbia and the Yukon and part of western Alberta. The Canadian Rockies and the Mackenzie Mountains form its eastern ranges; in the west are the St. Elias and Coast Ranges. Between these mountainous areas are rugged plateaux.

WATER

Canada has over 15 per cent of the world's known fresh-water volume. Fresh water forms over 7.6 per cent of the total area of the country.

Four of the five Great Lakes lie partly in Canada.

Some of the largest lakes situated entirely within Canada are Great Bear (12,275) square miles, Great Slave (10,980 square miles), Winnipeg (9,465 square miles), and Athabasca (3,120 square miles).

The St. Lawrence River and the Great Lakes are one of the world's great waterways, and carry deep-sea shipping more than 2,280 miles from the Atlantic Ocean into the heart of the country.

The longest river in Canada is the Mackenzie (2,635 miles), which flows into the Arctic Ocean.

CLIMATE

Canada's climate is greatly influenced by its mountain ranges, plains and water surfaces.

The mountain ranges of the Cordilleran region prevent humid Pacific air from reaching the interior, and also prevent the westward flow of cold Arctic air from reaching the West Coast.

The central plains of the North American continent form a corridor for the flow of warm air north from the Gulf of Mexico and cold air from north to south and east. This air movement creates sudden and drastic weather changes in Canada's interior.

The large water surfaces in Central and Eastern Canada (Hudson Bay and the Great Lakes) produce considerable modification in the climate.

Canada's lowest official temperature reading was -81°F. , recorded at Snag in the Yukon Territory in February 1947. The highest official temperature reading was 115°F. recorded at Gleichen, Alberta, in July 1903.

ATLANTIC PROVINCES

The combined area of the Atlantic Provinces—Newfoundland, Nova Scotia, New Brunswick and Prince Edward Island—is 208,148 square miles, 5.5 per cent of the total area of Canada.



NEWFOUNDLAND

Area: 156,185 square miles

Population: 532,000

Capital: St. John's

The long arm of Labrador on the eastern boundary of Quebec belongs to the Canadian Shield; the island of Newfoundland is a continuation of the Appalachian Highlands. The highest point on the mainland is 5,160 feet and, on the island, 2,672 feet. The island's surface dips generally east and northeast, with rugged coasts in the south and east, fringed with islets. Peninsulas, bays, lakes and river basins on the island all lie in a northeast to southwest direction. Fresh water covers about 13,140 square miles of the province.

The temperature is moderate, with frequent high winds. Precipitation is heavy and nearly constant, with rain or snow on an average of 207 days a year at St. John's. The island has a yearly average of 45-55 inches.

Fish, particularly cod, is Newfoundland's best-known resource. Off the coast of Newfoundland lies the world's most extensive fishing-ground, the Continental Shelf

Lobster-pots, Bayside, Nova Scotia (Malak)



There are an estimated 33,862 square miles of productive forest land, mainly on the island, which support a thriving pulp-and-paper industry.

Labrador contains most of the province's large deposits of iron ore, and many other minerals. It also possesses vast water-power resources. Newfoundland's soil suffers from acidity and much of it is rocky. Total occupied farm land is only 0.05 per cent of the island's land area.

NOVA SCOTIA

Area: 21,425 square miles

Population: 794,000

Capital: Halifax

The coast is bold and rugged, with excellent harbours. The Atlantic upland is a distinctive feature of the province, consisting of five detached fragments of uniform upland surface separated by lowlands and fertile valleys. There are many rivers and lakes.

The continental climate is somewhat moderated by oceanic influences on the prevailing west and north-west winds from the continent. Precipitation is about 50 inches annually.

Coal is the most important mineral resource. Nova Scotia has many other mineral deposits, including gypsum, barite and salt.

Forests cover almost 80 per cent of the province, and there is considerable water power, from which is generated 17 per cent of the province's electricity. From the Atlantic, the province obtains many varieties of fish, and it ranks second among the provinces in the value of fishery products.

The most notable agricultural region is the Annapolis Valley, with its vast apple orchards. About 14 per cent of the total land area is occupied farm land.

NEW BRUNSWICK

Area: 28,354 square miles

Population: 642,000

Capital: Fredericton

New Brunswick has low, rounded hills and rolling uplands of moderate altitude. In the south and east the land lies close to sea level; in the north and west it rises in places to over 2,500 feet. Much of the soil is rocky, and arable land is scarce. There are many rivers. Saint John is an ice-free port.

The interior of the province has a continental climate, with intense heat and cold. On the coast, the climate is more temperate as a result of the maritime influences. Precipitation is ample and constant, amounting to about 44 inches a year.

The largest portion of New Brunswick's production (45.5 per cent) comes from manufacturing. The construction industry follows, with 25.6 per cent.

Although the soil is mainly unsuited to agriculture, a generous rainfall supports forests that cover 86 per cent of the area of the province. Forest industries account for 5.5 per cent of New Brunswick's production.

Other resources, in the order of their importance, are mining, electric power and fishing.

PRINCE EDWARD ISLAND

Area: 2,184 square miles

Population: 113,000

Capital: Charlottetown

The crescent-shaped island is 145 miles long and from three to 35 miles wide. Its irregular coastline has large bays, long inlets, high cliffs and sandy beaches. The land is low and rolling; its highest elevation is only 450 feet above sea level.

The island is sheltered from the Atlantic by Nova Scotia and Newfoundland, and is therefore free from sudden extremes of temperature and from fog. Its waters are warmer in summer than those of neighbouring provinces. The average precipitation is about 43 inches.

The climate and soil are well suited to mixed farming, and about 66 per cent of the province is occupied farm land. Potato-growing and dairying are the main agricultural activities.

The fishing industry suffers from the lack of harbour facilities, as there are only one or two readily accessible harbours on the north shore.

The island's fine weather, beaches, fishing and scenery are natural resources that attract many tourists and provide a substantial income.

CENTRAL PROVINCES



QUEBEC

Area: 594,860 square miles

Population: 6,059,000

Capital: Quebec City

There are three geological regions:

The St. Lawrence Lowlands, constituting a low-lying plain traversed by the St. Lawrence River, contains most of the populated area, industrial centres and fertile farm land.

The Appalachian region extends south of the St. Lawrence River between Quebec City and the interna-

Autumn hillside, Matapédia, Quebec



tional boundary, and includes the Gaspé Peninsula. It contains mountains and plateaux. Agriculture, chiefly in the form of dairy farming, is confined mainly to the valleys, the uplands being forested.

The Canadian Shield covers four-fifths of the province, forming an arc around Hudson Bay. Its area is 470,000 square miles, most of which is rocky and covered with coniferous forest. Only 5 per cent of the area is arable, most of this land being in the clay-belt east of Lake Abitibi.

There are no areas of great altitude, though the Laurentians, a division of the Canadian Shield north of the St. Lawrence Valley, rise to 3,000 feet, and the Tornagat Mountains on the Labrador border reach 5,000 feet. South of the St. Lawrence, the extension of the Appalachians reaches a height of 3,000-4,000 feet. With its many lakes and rivers, the province has 71,000 square miles of water. The St. Lawrence River is a major inland waterway, and the life of the province is concentrated along its banks.

The climate is varied. In the north and northwestern parts of the province it is cold and stable; in the south it is more temperate but subject to sudden changes. Precipitation is nearly constant throughout the year, ranging from 40 inches or more in the St. Lawrence Valley to 15 inches in the north.

Mining is Quebec's most important primary industry. Many metals have been mined for several decades; recently, huge quantities of iron were found in central Quebec. The Gaspé produces copper and most of Canada's asbestos is located in the Eastern Townships.

Hydro-electric power ranks second as a primary resource; there is more installed and potential water-power than in any other province.

Quebec's forests provide 36 per cent of Canada's pulp and 35 per cent of its paper production.

Quebec is second only to Ontario in industrial development, with many thriving industries.

Agriculture is centred in the fertile St. Lawrence

Valley. Its importance has declined in recent years with increased industrial development.

ONTARIO

Area: 412,582 square miles

Population: 7,825,000

Capital: Toronto

Northern Ontario lies within the Canadian Shield, and consists mainly of rocky forested country. There are patches of land suitable for cultivation, consisting of clay soil mixed with sand. A third of southern Ontario lies within the Shield; the rest of the region is underlain by limestone and shale, and the soil is of excellent arable quality. The highest elevation in the south is only 1,700 feet.

The climate is continental, with great variation in temperature. In the south, precipitation exceeds 35 inches a year; north of the Great Lakes it is about 29 inches.

Ontario has over 165,000 square miles of productive forest.

The province contains Canada's richest farm land and produces 31 per cent of the country's cash receipts from farming operations. Intensive mixed farming is carried on—dairying and livestock-raising, and the growing of tobacco and vegetables and fruits of all kinds.

Mining is of great significance. Most of Canada's cadmium, calcium, cobalt, magnesium, nickel, salt, silver and uranium—as well as much of its copper and gold—is mined in Ontario.

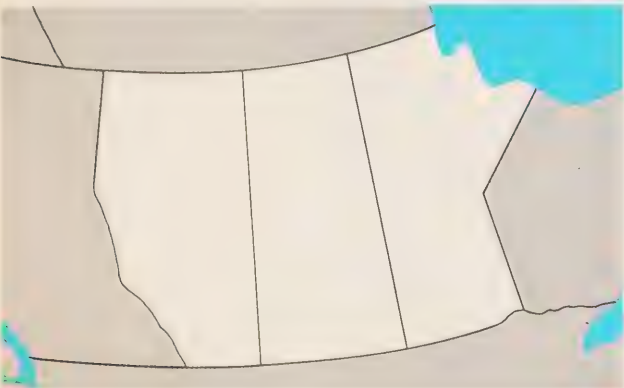
Electric power has been a prime factor in the development of Ontario's extensive industrial complex, particularly in the regions bordering the St. Lawrence River and the Great Lakes.

Most of the conveniently-located water-power has been used and in recent years thermal power has become more important. It now accounts for 57 per cent of the province's installed generating capacity and includes Canada's largest nuclear-power station at Pickering. It

will have a generating capacity of 2.2 million kw by the end of 1973.

PRAIRIE PROVINCES

The Prairie Provinces (Manitoba, Saskatchewan and Alberta) cover 758,000 square miles, or about 20 per cent of Canada's area. The greater part of the three provinces consists of the Interior Plains, which are covered with grass in the south and wooded in the north. The Precambrian Shield, a rocky expanse dotted with rivers, forest



and muskeg, covers much of northern Manitoba and Saskatchewan. Western Alberta lies in the foothills and eastern ranges of the Rocky Mountains.

MANITOBA

Area: 251,000 square miles
Population: 992,000
Capital: Winnipeg

Most of the province is of limited elevation, the highest point being 2,729 feet. The freshwater area is 39,225 square miles. The northern three-fifths of the province lies within the Precambrian Shield.

Manitoba has continental extremes of heat and cold, ranging from -50°F. in winter to 90°F. or more in summer. Snowfall is less than in Eastern Canada. Precipitation averages 18 inches a year

The primary resource is land; in the southwest the soil supports valuable field crops of wheat, barley, flax-seed and oats. Other farm products are livestock, dairy products, eggs and poultry.

About 49 per cent of the province is forested, and nearly half this area produces marketable timber.

Rich mineral deposits have been found in the Shield, particularly nickel and copper.

SASKATCHEWAN

Area: 251,700 square miles
Population: 916,000
Capital: Regina

The northern third of the province lies within the Precambrian Shield. The southern part is a rolling plain. The freshwater area is 31,518 square miles.

As in Manitoba, the climate is continental; extremes of temperature as high as 100°F. and as low as -50°F. are not uncommon. The annual precipitation averages 15 inches, half of which occurs during the summer.

Land is the main resource. Over 46 per cent of the land area is tillable, and almost 13 million acres are planted to wheat.

There are valuable mineral deposits, with oil the principal product.

A prosperous potash industry has recently been established.

ALBERTA

Area: 255,285 square miles
Population: 1,655,000
Capital: Edmonton

The northern half of the province has many rivers, lakes and forests, with broad expanses of prairie country. The southern half contains fertile wheatland and rolling park-like terrain, as well as the mountainous region that forms part of the Rockies and their foothills.

The average yearly precipitation is from 15 to 20 inches. The warm Chinook wind from the southwest can

cause the temperature to rise as much as 80° in a single day, turning snow to vapour.

The province has little water-power, owing to the gentle slope of the land, but energy is available from important deposits of petroleum, natural gas and coal. Alberta produces about 75 per cent of Canada's oil and 82 per cent of its gas, and is the source of about 46 per cent of the country's native coal.

The industry next in importance is agriculture.

BRITISH COLUMBIA AND THE TERRITORIES



About 30 per cent of the province consists of farm land that supports large crops of wheat and huge herds of livestock.

Forests cover more than 60 per cent of the province's land area.

BRITISH COLUMBIA

Area: 366, 255 square miles

Population: 2,247,000

Capital: Victoria

Most of this province contains mountains and plateaux. The Rockies in the east (highest peak Mount Robson, 12,972 feet) and the Coast Mountains in the west (highest peak Mount Waddington, 13,260 feet) traverse the province from south to north. The highest peak in B.C. is Mount Fairweather (15,300 feet) in the St. Elias Mountains on the border of Alaska. In the south are a number of elongated and relatively narrow valleys, such as the Okanagan Valley, in which agriculture thrives.

The winds from the Pacific Ocean are warmed by the Japanese Current. Rainfall, varying regionally from 10 to 115 inches annually, is heavy on the coast in winter; but the interior, shielded by the Coast Range, is dry. Although extreme temperatures occur in the far north of the province, the mean temperature elsewhere ranges from 25°F. to 60°F.

Over 73 per cent of British Columbia is forested, and almost four-fifths of this area produces marketable timber. The province is Canada's largest producer of lumber and possesses a sizeable pulp-and-paper industry.

Though there is relatively little cultivable land, dairying and fruit farming are important.

Fish, particularly the several varieties of Pacific salmon, is a valuable resource; the province ranks first in Canada in value of its catch.

In mineral production British Columbia ranks third among the provinces. Its most important minerals are copper, oil, zinc, coal, molybdenum, natural gas and lead.

THE YUKON

Area: 207,076 square miles

Population: 19,000

Capital: Whitehorse

This territory consists of elevated plateaux and mountains lying within the Cordilleran region. Its highest peak, Mount Logan (19,850 feet), is also the highest in Canada.

Temperatures vary greatly, owing to the influence of the relatively warm Pacific Ocean and the cold Arctic Ocean. Though extremes of -81°F . and 95°F . have been recorded, the mean monthly temperature ranges in January from -18°F . to 0°F . and in July from 57°F . to 60°F . Precipitation is low, averaging 10-17 inches a year.

Minerals provide most of the territory's income. The most important are zinc, asbestos, silver and copper.

Another significant natural resource is the substantial fur crop.

Water-power potential is great.

NORTHWEST TERRITORIES

Area: 1,304,903 square miles

Population: 36,000

Capital: Yellowknife

The Northwest Territories cover more than a third of Canada, and include the Arctic archipelago. Much of the region is low-lying but, in the northern Arctic islands, the land rises above 8,500 feet. There are over 51,000 square miles of fresh water in these territories, including the Mackenzie River and Great Bear and Great Slave Lakes. There are vast expanses of muskeg and, north of the tree-line, of barren tundra.

Summers are often warm below the tree-line, but farther north the climate is arctic. Winters are extremely cold, but snowfall is relatively light.

Minerals are the chief resource, and include zinc, lead, gold, silver and oil.

Furs, fish and forests also produce considerable income.

Moraine Lake in the Rocky Mountains



THE PEOPLE

Canada's estimated population as of June 1, 1972, was 21,830,000.

Over two-fifths is of British stock. French-speaking descendants of the original French colonists constitute about 30 per cent. The rest are of other origins.

Because the French retained their language, culture and traditions after the British conquest of Quebec, French Canada has a distinct cultural life of its own. Most French-speaking Canadians live in Quebec, but there are also many in other parts of the country, notably New Brunswick, Ontario and Manitoba.

The English-speaking population has increased mainly by immigration from the British Isles and the United States. More than 3.6 million are of Scottish and Irish descent; many others are descended from the thousands of American colonists who moved into Canada at the time of the American Revolution (1776-1783).

The early European immigrants to Canada, other than those of French and British origin, settled mainly in the Prairie Provinces; more recently they have settled in all the provinces. The third-largest ethnic group in Canada are the Germans. Other large groups are the Ukrainians, Italians, Scandinavians, Netherlands and Poles.

The native peoples of Canada, the Indians and Eskimos, comprise only 1.3 per cent of the population. There are 257,619 Indians, 73 per cent of whom live on government reserves occupying over 6 million acres. Canada's 17,000 Eskimos live in the Northwest Territories, northern Quebec and Labrador.

About 75 per cent of Canada's population lives in urban areas concentrated within 100 miles of the United States border.

Skaters on the Rideau Canal, Ottawa (Vroom)



Eskimo girl broadcasting at Frobisher Bay, N.W.T. (Haas)



Peach-packer at work, Niagara Falls, Ont.



Highland dancers,
Ottawa (Hanawa)

HISTORY

Old Fort Chambly, Quebec



Firing cannon, Fort York, Toronto



Canada was first inhabited by Asian tribes believed by archaeologists to have migrated across the Bering Strait many thousands of years ago. The descendants of these people are today's Eskimos and Indians.

The name "Canada" is believed to have originated with its first inhabitants, since the Huron-Iroquois Indians used the word *kanata* to describe a settlement. The term is thought to have been picked up by European discoverers, who changed it to its present spelling.

The story of modern Canada began more than 465 years ago, when a Genoese navigator, John Cabot, claimed a large portion of the Atlantic seaboard in England's name, though no settlement occurred at that time.

Cabot was followed by Jacques Cartier, who erected a cross on the Gaspé Peninsula in 1534. The following year he sailed up the St. Lawrence River to the Indian settlements of Stadacona (on the site of today's Quebec) and Hochelaga (Montreal).

The true founder and settler of French Canada, however, was the French explorer Samuel de Champlain, who, impressed by the rich furs bartered by friendly

Champlain monument,
Nepean Point, Ottawa (Vroom)



Indians he encountered, established, between 1604 and 1634, tiny settlements of French pioneers along the Bay of Fundy and along the shores of the St. Lawrence at Quebec and Trois Rivières.

British attempts at settlement in Canada occurred as early as 1628 in Nova Scotia and Newfoundland.

Following the years of early settlement, both French and English pioneers lived off the land and engaged in the fiercely competitive fur trade. The rough land tracts they occupied were granted to them by their respective home governments; the furs they trapped or bartered for with the Indians were sent to France and England, where government-chartered companies reaped large profits.

Throughout the remainder of the seventeenth century and the eighteenth century, most of the territory eventually to be known as Canada was discovered, explored and mapped for future development. The Great Lakes and the Prairies, the Rocky Mountains and Pacific Coast, James Bay and the Canadian Arctic were all traversed or reached by the adventurous explorers of two centuries ago.

Seventeenth century settlement of Sainte Marie, reconstructed



Upper Canada Village, Ontario



Canada's political shape, after a century of conflict between the rival settlers, the political ambitions of the parent nations and the critical Seven Years War, began to emerge from the dust and smoke over the Plains of Abraham in 1759, where a battle was fought that resulted in the total conquest of the colonies by the British.

The Treaty of Paris, signed in 1763, placed New France under British sovereignty, though it permitted the French to retain their religion.

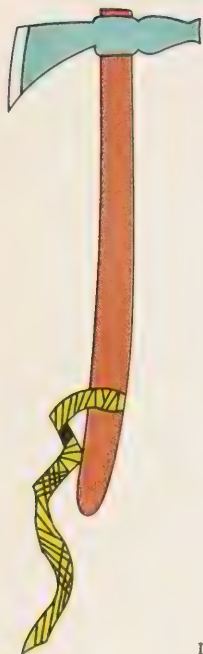
The American Revolutionary War of the 1770s, with the birth of an independent nation south of the Great Lakes and the St. Lawrence River, was an event as important for future Canadians as for the new citizens of the United States of America.

For, despite the overtures of the leaders of the Revolution and a march on Montreal by American forces, both French and English colonists in the north chose British sovereignty instead of the political independence conceived by their southern neighbours. British North America, partly French, partly English, was born.

For the ensuing 50 years, the colonies comprising British North America—Upper and Lower Canada (Ontario and Quebec), New Brunswick, Prince Edward Island and Nova Scotia—developed materially, and their populations increased. First came the Loyalists from the newly-created United States in the early 1780s to settle in Ontario and the maritime colonies; next came thousands of immigrants from Britain and Northwest Europe to accept offers of free land and supplies.

Agriculture and forestry eventually surpassed the fur trade in importance and were developed to the stage where the settlers could import manufactured goods in exchange for flour and lumber. Roads and canals were built; cities, towns and villages developed; religious and educational institutions flourished. The foundations for political evolution from colonialism were established.

Several important developments hastened the union of the colonies into a young nation in 1867. Among these were:



- The political uprisings of 1837 in both Upper and Lower Canada, by means of which a maturing citizenry, which had developed a rough land and fought for it, made known its needs and achieved the right to responsible government and a greater say in the political management of the new country;
- the end of the American Civil War, which left in existence large U.S. forces that it was feared might be directed against British North America in reprisal for British aid to the Confederacy;
- the expansion of the American West and the slower settlement of the Canadian territories west of the Great Lakes, prompting the development of rail communications and the feeling among Eastern political leaders that a federation of the whole country must be achieved if the West was to be saved from encroachment and the economic potential of the new country developed.

The British North America Act of 1867 created a new Canada, embracing four provinces—Ontario, Quebec, Nova Scotia and New Brunswick. It provided for a federal union and for the parliamentary system of government and an elected House of Commons, including the chief executive officer, the Prime Minister, and his Cabinet. Six other provinces eventually entered Confederation, the latest being Newfoundland in 1949.

The advent of the twentieth century brought with it millions of new settlers, an influx of foreign investment capital, financial and industrial development and the emergence of a steadily-growing manufacturing industry.

The West became known as the “bread-basket of the world”, and agriculture became specialized. The discovery of gold, nickel, silver and a score of other ores revealed Canada as one of the world’s great storehouses of natural resources.

From 1914 to 1918, Canada’s contributions in men and material to the Allied victory earned important international recognition both economically and politically.

Economically, the country’s iron-and-steel industry, its shipbuilding industry, its new aircraft industry, its vast networks of communications (railways, highways, waterways, telegraph, telephone, wireless, etc.), all came into full play, and the young country took its first step towards modern industrialization.

Politically, as a country whose military forces fought with such gallantry throughout the war, Canada was invited to take a separate place at Versailles and was one of the original members of the League of Nations. Following the Imperial Conference at London in 1926, attended by Britain’s senior Dominions, and the enactment of the Statute of Westminster in 1931, Canada became a completely autonomous nation so far as its domestic and international policies were concerned.

Following the severe economic hardships of the Thirties and the outbreak of the Second World War, which Canada entered on its own initiative, the nation again proved, through its manpower, its resources and abilities, to be both a tough fighting ally and a strong arsenal in the defence of freedom from political tyranny.

At the close of the war, Canada ranked third in naval strength and fourth in air-power among the Allies, and had contributed \$2,250 million in mutual aid to its comrades-in-arms.

Canada’s history for the 28 years following the end of the Second World War is the story of valuable aid to less fortunate countries, of further sacrifice in the Korean conflict and of numerous contributions to peace-keeping operations throughout the world.

At home, it is the story of remarkable growth in primary and secondary industry, of rich new finds of oil, natural gas and many new minerals, of advances in science, culture and education, and in the ever-challenging task of achieving national unity without submerging the cultures of the peoples who helped build the nation.

The sharpened logs of its palisade protected Sainte Marie from Iroquois attack



Opening of Parliament, Senate Chamber



FEDERAL

Canada has a parliamentary system of government, established with the adoption of the British North America Act of 1867, which states “there shall be one Parliament for Canada, consisting of the Queen, an Upper House styled the Senate, and the House of Commons”.

Queen Elizabeth II, as Queen of Canada, is Head of the Canadian State. (With the emergence of the Commonwealth of Nations in 1931, Canada, like several other original senior partners such as Australia and New Zealand, chose to retain the same parliamentary structure it adopted in 1867.) The Queen’s representative in Canada is the Governor General, who is appointed on the recommendation of the Prime Minister, generally for a five-year period.

The House of Commons and the Senate constitute the legislative arm of the Canadian Government. The judiciary, which consists of the Supreme Court of Canada, the Exchequer Court, and several minor courts appointed by the Governor General, is independent of both Houses of Parliament.

The 264-member House of Commons, which includes the Prime Minister, his Cabinet colleagues and members of his party, and members of opposing parties, is an elected body. The term of office is a maximum of five years, but an election may be called earlier, at the discretion of the Prime Minister.

Four political parties are at present represented in the House—the Liberal Party, the Progressive Conservative Party, the New Democratic Party, and the Social Credit Party.

By tradition, the leader of the party winning most seats in the House is asked by the Governor General to form the Government and thus becomes Prime Minister. He selects his Cabinet, which is the executive arm of the Government, from elected members of his party.

The Cabinet Ministers head the various government departments, which are staffed by civil servants administering the affairs of the nation. National policy is formulated by the Cabinet, but its decisions must have the sup-

port of the majority of elected members of the House before becoming law.

The head of the party receiving the second-largest number of seats in a federal election officially becomes Leader of the Opposition in the House. It is the responsibility of the Opposition party, and all other Members of the House of Commons, to examine all actions of the Government and criticize those with which they disagree.

Approval or disapproval of proposals, generally in the form of bills introduced by the Government, and sometimes by private Members, is determined in the House by vote. When the Cabinet (i.e. the Government) loses the confidence of the House, it must either resign or request a dissolution from the Governor General and go to the people in a general election.

The Senate, or Upper House, consists of 102 members appointed on a regional basis by the Governor General on the recommendation of the Prime Minister. The Senate may initiate minor legislation that does not involve expenditure of public funds. The Senate is required to examine, pass or reject all legislation sent up from the House of Commons. Senators retire at the age of 75.

All Government bills are read three times in both the House of Commons and the Senate before becoming legislation or law. If a bill passes the House of Commons, it may be altered or rejected by the Senate. However, important measures cannot be held up indefinitely by the Upper House. All bills are given royal assent by the Governor General.

The Canadian Constitution, establishing the Government of Canada and the framework within which the federal and provincial governments share their respective responsibilities, is not incorporated in a single written document. It is rather a combination of enactments, beginning with the British North America Act of 1867, of statutes and Orders in Council and, more significantly, the adherence to parliamentary customs and practices inherited from the British system, upon which Canada's parliamentary government was modelled.

The major responsibilities of the Federal Government at Ottawa are the control of the nation's defences and foreign policy, trade and commerce, currency and banking and criminal law.

PROVINCIAL

There are ten provincial governments in Canada, each headed by a lieutenant-governor and consisting of an elected legislative assembly. All provincial governments have a unicameral legislature.

Provincial governments are responsible for important matters such as education, working conditions, property laws and health. Within each province, elected municipal governments deal with local affairs. Each province has its own series of courts, ranging from magistrates' courts to the provincial superior court.

Lieutenant-governors represent the Crown, and are generally appointed for five-year terms by the Governor General on the recommendation of the Prime Minister.

TERRITORIAL

Both the Yukon and the Northwest Territories are represented in the House of Commons, and both have a considerable degree of local self-government.

The Yukon government comprises a Commissioner, appointed by the Federal Government, and a locally-elected Legislative Council of seven members. The government of the Northwest Territories is also headed by an appointed Commissioner and a 12-man Council, seven of whom are elected and the remainder appointed by the Federal Government.

More autonomy is being granted to the Territories and many functions, formerly the exclusive responsibility of the Federal Government, are gradually being assumed by the governments of the Yukon Territory and Northwest Territories.

INTERNATIONAL RELATIONS



Canadian doctor treats child in Malaysia

As a leading middle power, Canada is engaged in the continuing search for peace and international well-being, in the struggle for better social and economic conditions among the less fortunate peoples through technical and financial assistance, and in the pursuit of wider and freer international commerce.

The bases of Canadian foreign policy are its membership in the Commonwealth, the United Nations and the North Atlantic Treaty Organization and its relations with the United States.

Responsibility for the conduct of Canada's international relations rests primarily with the Secretary of State for External Affairs and his ministry, the Department of External Affairs.

Canada's first diplomatic mission, the Canadian Legation (now Embassy) at Washington, was opened in 1927. Today Canadian interests are represented abroad by 50 embassies, 16 high commissioners' offices, 9 consulates, 14 consulates general, 1 military mission, 9 permanent delegations to international organizations and 1 international commission for control and supervision. As the national capital, Ottawa plays host to 60 embassies and 14 offices of high commissioners, many of which have consular or trade offices in other parts of the country.

Canada is a senior partner and a major participant in Commonwealth affairs. The present-day Commonwealth has evolved from the small group of British Dominions which joined with Britain to form such an association in 1931 to an imposing family of 32 sovereign states, covering more than a fifth of the earth's land surface and representing over 860 million people of many colours, creeds and languages.

Within this global family, Canada is involved in active consultation and co-operation in such projects as the Colombo Plan, the Canada-West Indies Aid Program and the Special Commonwealth-Africa Aid Program. Scholarships, student and teacher exchanges and military training are arranged under Commonwealth auspices.

Today, a nation's defence policy is inseparable from its foreign policy. Thus, under the North Atlantic Treaty Organization (NATO), of which it was a founding member in 1949, Canada has major defence commitments through contributions of sea, land and air personnel, as well as military equipment.

Also within the framework of NATO, Canada and the United States are linked by the North American Air Defence Command (NORAD) for their mutual protection.

Apart from Canada's defence contributions to NATO, it shares (with 14 other members) in the continuing exchange of information, opinions and plans regarding political, economic, cultural, scientific and environmental developments affecting the group. Canada has contributed nearly \$2 billion in equipment and training to other NATO countries.

Through the Organization for Economic Co-operation and Development (OECD), Canada shares with other developed countries in discussions on trade and economic policies.

As a charter member of the United Nations, Canada has played, and continues to play, a prominent role in the affairs of the world organization.

Canada has participated in every peacekeeping operation undertaken by the United Nations since 1948—in Kashmir, Palestine, Korea, the Congo, West Irian, Yemen, Cyprus, the Middle East and India-Pakistan.

Canada is also active in international disarmament discussions in the UN, the Conference of the Committee on Disarmament and elsewhere, and is also associated with the various international commissions established in Indochina.

Canada's long-standing friendly relations with the United States are unique. Both nations share a common heritage and similar standards of living, yet both grew to their present status in separate ways.

Mutual defence is of vital importance to both nations and since 1940 a Permanent Joint Board on

Defence has existed to co-ordinate and develop continental defence.

Because the two countries occupy the greater part of the northern half of the western hemisphere, many problems have arisen over boundary waters, canals and related matters, and, since 1909, an International Joint Commission has functioned successfully to help resolve difficulties to the satisfaction of both nations.

External Affairs headquarters—Lester B. Pearson Building, Ottawa
(Vroom)



FOREIGN TRADE AND COMMERCE



Locomotive with grain cars, Thunder Bay, Ontario

In total value of trade, Canada normally ranks sixth, after the United States, West Germany, Britain, France and Japan.

Over 63 per cent of Canada's imports are fully-manufactured goods. Over half of Canada's imports enter duty-free. Fully-manufactured products, on the other hand, account for only 37 per cent of exports, with semi-manufactured goods providing another 33 per cent.

The total value of Canada's foreign trade has advanced each year since 1958. Since 1961, exports have exceeded imports in all but one year. Canadian trade with all countries in 1972 reached \$38.2 billion, and there was a trade surplus of \$760 million.

The main components of Canadian export trade, by stages of manufacture are finished products, followed by fabricated products, crude materials and food products.

The pattern of imports tended to follow a somewhat similar pattern over the past few years. Transportation and communication equipment and machinery account for over 42 per cent of the total imports. Motor vehicles and parts top the list of leading commodities.

The United States is Canada's principal trading partner, each country being the other's best customer. Britain is second, and together these two countries participate in over three-quarters of Canada's international trade. The next-largest market for Canadian goods is Japan, followed by West Germany and the Netherlands.

The order of the first five most important suppliers of Canadian imports is the United States, Britain, Japan (clothing and electrical goods), West Germany (cars) and Venezuela (petroleum).

The primary function of the federal Department of Industry, Trade and Commerce is to promote external trade through its head office in Ottawa, its six regional Canadian offices and a corps of trade commissioners stationed around the world.

The Trade Commissioner Service has more than 240 trade commissioners stationed at 81 posts in 57 countries. Knowing the economic conditions in these territories, they provide information on potential markets, foreign competition, import contracts, tariff provisions, shipping facilities and labelling regulations. They also assist in securing reliable agents for Canadian firms and provide a point of contact for visiting businessmen.

The Canadian Government Travel Bureau, an agency of the Department of Trade and Commerce, is responsible for encouraging tourist travel to Canada and coordinates tourist promotion outside Canada. It also undertakes extensive advertising campaigns, and handles approximately 2.5 million inquiries annually from potential visitors to Canada. Tourist offices are operated in 16 cities in the United States, as well as London, Paris, Frankfurt, Mexico City, Tokyo, The Hague and Sydney.

Principal Domestic Exports (\$'000)

Commodity ¹	1969	1970	1971
Motor vehicle and parts	3,612,999	3,637,777	4,339,905
Newsprint paper	1,125,801	1,110,396	1,084,422
Wheat	526,201	747,196	886,771
Lumber	696,512	663,963	829,602
Crude petroleum	525,780	649,075	786,851
Nickel, ores and alloys	483,670	838,210	747,598
Copper, ores and alloys	536,807	737,294	606,093
Machinery (except farm)	444,199	481,377	490,463
Aluminum, ores and alloys	495,433	479,694	468,136
Iron ores and concentrates	333,155	475,743	413,333
Iron and steel alloys	305,879	429,405	401,624
Aircraft and parts	398,963	429,305	368,714
Fish	253,067	247,137	267,366
Grains (other than wheat)	68,952	189,113	257,511
Natural gas	176,188	205,988	250,719
Fertilizers and fertilizer materials	171,927	221,221	238,446
Chemicals	199,187	225,037	236,480
Communications equipment	217,514	249,235	233,610
Asbestos, unmanufactured	216,276	227,251	223,927
Zinc, ores and alloys	179,478	216,674	212,268

(¹) Commodities ranked by value of exports in 1971.

Principal Imports (\$'000)

Commodity ¹	1969	1970	1971
Motor vehicles and parts	3,546,056	3,251,535	4,109,679
Non-farm machinery	1,442,371	1,474,137	1,476,732
Crude petroleum	393,453	415,161	541,114
Steel, all types	460,924	440,914	496,441
Communications equipment	393,511	378,572	451,829
Electrical equipment	361,127	363,132	415,748
Wearing apparel and accessories	247,721	253,882	294,240
Aircraft and parts	400,781	384,430	285,954
Tractors and parts	194,401	188,594	264,043
Fruit and fruit products	249,660	243,926	263,671
Scientific equipment	285,181	273,182	261,181
Printed matter	233,935	244,665	258,365
Chemicals	215,761	273,865	230,362
Plastic materials	202,836	199,618	218,503
Other petroleum and coal products	223,524	205,735	203,466
Aluminum, ores, concentrates & scrap	187,914	178,407	186,665
Coal	114,603	150,832	151,389
Wood, lumber and plywood	148,394	123,372	150,266
Cotton, including yarn, thread & fibre	133,083	112,302	139,805
Vegetables and vegetable products	121,964	127,816	136,260

(¹) Commodities ranked by value of imports in 1971.

Freighter takes on a cargo of wheat, Thunder Bay, Ontario



PRIMARY INDUSTRIES

(Vroom)

AGRICULTURE

Agriculture is Canada's second most important primary industry, although it employs less than 6 per cent of the country's labour force. Occupied land exceeds 170 million acres and the total number of farms is 366,128. Farming is highly commercialized, mechanized and specialized.

Types of farming include grain and other field crops, dairying, livestock and poultry raising, fruit and vegetable growing, and the cultivation of specialties such as tobacco honey and maple products, and fur farming.

The farm commodity produced in greatest abundance, owing to the combined influence of climatic conditions, plant-breeding programs and an efficient grading system, is wheat. In 1971, the production of this grain was 524 million bushels. The general agency in Canada for the sale of all grains, including wheat, is the Canadian Wheat Board, a Crown corporation.

Livestock and dairy enterprises together yield 59 per cent of the farm cash receipts. Wheat accounts for 14 per cent. Ranching prevails in the West, and native grasslands sustain almost 7.0 million head of beef cattle.

The most important fruit grown in Canada is the apple. Commercial orchards are found primarily in Nova



Combines harvest wheat in Saskatchewan

Scotia's Annapolis Valley, Ontario's Niagara Peninsula and the Okanagan Valley of British Columbia. The 1970 apple crop was estimated at 21 million bushels.

Next to apples, strawberries, peaches and grapes are Canada's most important commercial fruits. Production fluctuates from year to year, with the average value around \$25 million. Canning and processing industries have been developed in fruit-growing areas.

There are over 675 fur farms in Canada, producing mostly mink and fox. Today the value of pelts taken from animals raised in captivity surpasses the value of wildlife pelts. Production of all furs in 1970-71 numbered 4.5 million pelts and was valued at close to \$28 million.

Experimental farms and agricultural colleges play important roles in the development of Canada's very diversified and specialized agricultural industry. Government departments of agriculture, agricultural colleges and science faculties in some universities provide many services to Canadian farms through research establishments, inspection and grading services, health protection for animals and the operation of production and marketing programs.

Domestic ducks and geese, Niagara Falls, Ont.



Hereford beef cattle near Calgary, Alberta

FORESTRY

Canada's forests, covering 1.2 million square miles, 920,000 of which are productive, extend in an unbroken belt 600 to 1,300 miles wide from the Atlantic to the Pacific. British Columbia, Quebec and Ontario, in that order, contain the largest stands of marketable timber.

There are approximately 150 varieties of tree native to Canada, 20 per cent of which are softwoods, such as spruce, Douglas fir, hemlock, cedar, pine and balsam fir.

Canadian forestry consists of woods operations, wood industries (including lumber), pulp-and-paper industries and wood-using and paper-using industries. Forest-products output in 1969 amounted to 4.2 billion cubic feet of solid wood (i.e. logs, pulpwood, poles, fuelwood, etc.) The forests are the source of over 17 per cent of all Canadian exports.

The manufacture of pulp and paper was Canada's leading industry for many years and usually ranks first or second in wages, capital invested, value of shipments and exports. Canada stands second to the United States as the world's largest pulp-producer.

The value of the industry's annual shipments totals more than \$2.9 billion, and pulp-and-paper exports exceed \$2.0 billion annually. The industry employs 80,000 workers. During 1970, there were in Canada 139 mills producing pulp or paper. The largest individual pulp-and-paper mill in the world is located in Canada.

The industry has newsprint shipments of 8.8 million tons, almost three times those of any other country, and provides over 39 per cent of the world's newsprint needs. Newsprint is the nation's second-largest export. In addition, Canadian mills have a highly-developed production of fine paper, wrapping paper, tissues, paperboard and other cellulose products.

Saw-mills and planing-mills employ over 49,000 workers, and their annual value of shipments is \$1,135 million. Other wood industries employ 39,000 workers, and their annual shipments are valued at \$816 million. Some saw-mills can cut up to half a million board feet in a single shift. Exports of lumber are valued at \$830 million annually.

Federal and provincial forestry services maintain regional laboratories, field stations and experimental areas on Crown lands to carry out research in forest management, forest-fire control, disease and pest control, chiefly in the interest of forest conservation. There are eight schools of forestry at universities across Canada, and technical forestry training at the post-secondary level is offered at six technical institutes.

Trucking logs, Vancouver Island



FISHERIES

Commercial fishing, which dates back nearly 500 years, was Canada's first primary industry. Today, fishing is the nation's fifth-ranking primary industry. Canada's annual catch amounts to approximately 2.4 billion pounds, with a market value of over \$420 million.

Eighty thousand commercial fishermen are employed in fishing operations. Exports in 1971 totalled approximately \$268 million.

On the world market, about 60 per cent of the total demand is for fresh, frozen or cured fish; 18 per cent is for canned products and 15 per cent for shellfish.

On the Atlantic coast, lobster, cod, scallops, herring and flounders, in that order, are the most important fish. On the Pacific coast, salmon, halibut and cod are the major species. The development of new fish-freezing plants in the Atlantic Provinces since 1963 has increased their proportion of the total value of the national catch to about 65 per cent.

In May 1964, the Canadian Government established a 12-mile exclusive fishing-zone along Canada's coastline. The Federal Government has full legislative jurisdiction over coastal and inland fisheries for their protection, conservation and development.

Canada has entered into a number of international treaties, particularly with the United States, for the protection and preservation of marine fisheries. Among these are the International Northwest Atlantic Fisheries Convention and the International Pacific Salmon Fisheries Convention.



(Baich)

Stern-trawler off the coast of Nova Scotia

MINING

The mining industry in Canada is four centuries old. Copper, iron and silver were first discovered in 1604, coal in 1672 and iron in 1667. The first iron smelter, La Compagnie des Forges, was established in 1737 in Quebec. The Geological Survey of Canada, which enjoys a world-wide reputation, was established in 1843.

The discovery of gold in the Fraser River in 1858 attracted widespread interest. As the California gold strike of 1849 waned, miners flocked north to Canada to discover gold in the Yukon River in 1869. In 1896, the famous Klondike discovery was made, and thousands of prospectors flocked into the Yukon.

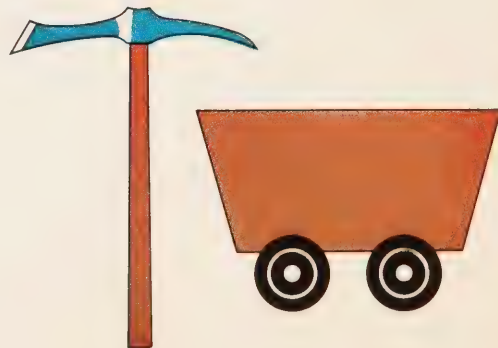
The mining industry in Canada ranks first among primary industries in both the net and aggregate values of output. Raw and semi-processed mineral products amounted to 27 per cent of the nation's exports in 1972.

Mineral production—metallic, non-metallic, fuels and structural materials—in 1972 was valued at \$6.4 billion. Canada leads the world in the production of asbestos, nickel, silver and zinc, and is second in the production of gypsum, molybdenum, potash, uranium and elemental sulphur. Canada supplies 56 per cent of the Western world's nickel requirements and produces almost 550 million pounds a year.

Canada also produces 35 per cent of the world's asbestos, 29 per cent of the zinc, 16 per cent of the silver, 23 per cent of the molybdenum, and 14 per cent of the potash and lead. It is the third-largest producer of aluminum. The largest aluminum smelter in the world, located at Arvida, Quebec, has a capacity of 450,000 tons a year. One of the most modern plants in North America for the production of aluminum sheets is located at Kingston, Ontario. Its annual capacity is estimated at 55,000 tons.

Crude-oil production in 1972 was 554 million barrels. Proved reserves of crude oil in Canada at the beginning of 1972 were 8.0 billion barrels, or the equivalent of 16 years of production at the current rate. Proved natural-gas reserves will last 24 years at the present production rate.

Iron-ore deposits now under exploration will make Canada in the near future a major iron-exporting nation. From 1944 to 1972, production increased from 0.6 million tons to 50.7 million tons valued at \$1.9 million and \$563 million respectively.



ELECTRIC POWER

Canada occupies second place in the world's *per capita* production of electricity. The total electrical energy generated in Canada in 1971 amounted to 190 billion kwh. At the end of 1971, the total installed generating capacity exceeded 46 million kw.

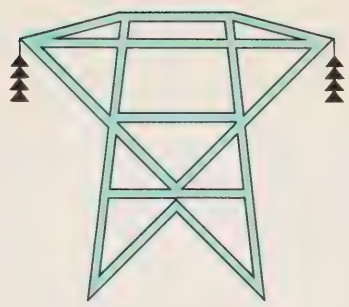
Seventy-four per cent of Canada's present power needs are met by energy generated from water-power. Since this resource is renewable, it is one of the nation's permanent natural assets. Canadians enjoy some of the lowest electricity rates in the world. The rate for domestic and farm service over the past five years has averaged 1.5 cents a kwh, compared to 2.4 cents a kwh in the United States.

The use of nuclear fuels for producing electric power has been the subject of intensive research in Canada and, in 1962, the country's first commercial nuclear electric power became available at Rolphton, Ontario. Coal, oil and natural gas are also used to produce thermal-electrical energy. In this domain, Ontario produces over 53 per cent of the total thermal-electric capacity of the nation.

In both developed and undeveloped water-power, Quebec is Canada's richest province. Quebec's entire hydro capacity is installed on rivers in the St. Lawrence River basin. This will change, however, with the projected power development in the northwestern region of the province. If present plans are completed, by the mid-1980s, 13 million kw will be harnessed from rivers flowing into James Bay. The projects on the Manicouagan and Outardes Rivers will be completed in 1976 and the seven new hydro plants will have a total installed capacity of 5.5 million kw.

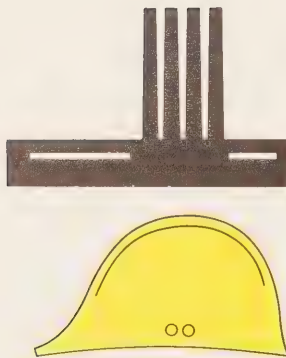
One of the largest hydro-electric plants in the world is located at Churchill Falls in the Labrador region of Newfoundland. It will have a capacity of 5.2 million kw when completed in 1975.

The Nelson River in Manitoba will have 1.5 million kw in operation by 1976 and a further potential of 4 million kw may be developed by the mid-1980s.



The Columbia River Treaty, under which Canada and the United States have jointly developed the waters of the Columbia River, provide large new supplies of low-cost hydro-electric power and important flood-control benefits for both countries. Canada will receive half the power benefits accruing in the United States from the regulation of 15.5 million acre-feet of water stored in Canada.

SECONDARY INDUSTRIES



At the time of Confederation, approximately 15 per cent of the workers in the population were employed in manufacturing and half in agriculture. Today less than 7 per cent are employed in agriculture and almost a quarter in manufacturing. Early manufactures were textiles, iron work, furniture, farm implements, flour, food and shoes,

The very rapid rate of industrial growth during the last 25 years of the nineteenth century had a massive impact on Canadian manufacturing. But it was the enormous demand of the Second World War on industry as a whole that caused the Canadian economy to undergo a surge of growth that reached its peak in 1944. The value of shipments of the manufacturing industries in that year was over two-and-a-half times that of 1939.

Since then, the discovery of large supplies of petroleum and natural gas and the construction of pipelines for their distribution, the discovery of large-scale deposits of iron ore and base metals, the growth of population, and the demand for consumer goods have all contributed to a diversified expansion of manufacturing unequalled in any period.

Canada is one of the leading manufacturing nations of the world. Manufacturing employs one of every four Canadians in the labour force, approximately the same proportion as in the United States. There are more Canadians employed in manufacturing than in farming, fishing, forestry, mining and construction combined. In 1970, the selling value of factory shipments reached \$46.4 billion. Salaries and wages reached \$11.4 billion, and there were 1.6 million employees.

Ontario is recognized as one of the world's major industrial areas, and, in 1970, accounted for 52 per cent of the total Canadian value of shipments in the manufacturing industries. Quebec accounted for 28 per cent and British Columbia for 8 per cent.

Motor-vehicle manufacturing today ranks as Canada's largest industry in gross value of shipments. Factory production began in 1904 and, by 1972, the country's assembly-lines were producing over 1,154,000 cars and



Paper-making, La Tuque, Quebec



319,879 commercial vehicles. The total number of vehicles in use at the beginning of the same year was almost 9.0 million. Exports of Canadian-made vehicles and parts amounted to \$4.7 billion and imports to \$5.0 billion.

Canada ranks eleventh among the steel-producing nations: its production, since the end of the Second World War, has increased fivefold. The 1972 production was 13.1 million tons.

The primary textile, knitting and clothing industries in Canada, employing almost 200,000 people, are among the largest employers in the country. Over 85 per cent of the companies in these industries are controlled by Canadians and their shipments in 1970 were valued at over \$3.4 billion.

The primary textile industry is a decentralized, small-town industry with most of its 950 plants located in Quebec and Ontario. There are two textile industries in the country. One makes or processes man-made and natural fibres and produces many consumer products. Its principal function is to supply the cutting or garment industry, which is the second of the textile industries. There are almost 2,200 clothing factories producing goods worth more than \$1.4 billion a year. The value of shipments of women's clothing is slightly higher than the value of shipments of men's clothing. Production of leather footwear in 1972 was 44.1 million pairs.

The electrical-products industries date from 1881. Today they rank sixth in the value of shipments, which were worth approximately \$2.7 billion in 1970 and employed over 120,000 people.

The construction industry employs about 500,000 people. Expenditures on new or repair construction work in 1972 were estimated at \$16.3 billion.



Spinning-frames with cotton yarn on bobbins are twisted for strength in textile plant

TRANSPORTATION

Transportation is essential to the survival of a country like Canada, exceeding 3,200 miles in breadth and almost 3,000 miles in depth from its southern border to the northern tip of Ellesmere Island; and the successful development of its vast transportation systems chiefly accounts for Canada's current status as a prosperous industrial nation.

Most prominent among these systems are the railways. Of these, two transcontinental systems, the government-owned Canadian National Railways and the Canadian Pacific Railway Company, provide 88 per cent of all rail transportation. There are approximately 64,000 miles of track throughout the country, and the railways today carry about 35 per cent of the ton-miles of freight and 3 per cent of passenger traffic.

The modernization of Canada's railway systems in recent years is attested by the complete changeover from steam to diesel locomotion, electronically-operated freight yards, data-processing systems for operational, accounting and statistical purposes, the construction of new rail lines into the more remote mining areas in Canada's North, and the elimination of certain uneconomical lines and services.

The importance of road transportation in Canada is emphasized by the fact that there are about 515,000 miles of roads and streets, the vast majority of which are surfaced; there are almost 9.0 million motor-vehicles registered in Canada, and the average mileage driven by Canadian motorists annually exceeds 8,900. The automobile accounts for approximately 88 per cent of all passenger-miles travelled each year.

Lockheed "Tri-Star" Jet Liner



CN "Super-Continental" near Jasper, Alberta



Freight and passenger services on Canadian roads and highways have expanded considerably in recent years, owing to the rapid growth in urban population and the expansion of the trucking industry from rural and local services to transcontinental services and north and south across the Canada-United States border.

More than 1.8 million trucks and road tractors operate on Canadian roads; and about 60 million passengers use the numerous interurban and rural bus services annually.

Canada has many new roads and expressways, but the most important nationally is the 4,860-mile Trans-Canada Highway, completed in 1962, which makes it possible to drive from St. John's in the east to Victoria in the west.

Water transportation, the earliest form of conveyance in Canada, still commands a most important position in a nation possessing three sea-coasts and thousands of navigable miles of rivers and lakes.

Canada possesses 20 large ports, each of which handles over two million tons of cargo a year. The St. Lawrence Seaway, a 2,280-mile water route from the Atlantic to the heart of the continent, has been operating since 1959, and approximately 72 million tons of iron ore, coal, wheat and other commodities are transported every season through its series of 17 locks, with a total elevation from east to west above sea level of 602 feet.

The National Harbours Board administers 12 of Canada's major ports. All Canadian waterways, including canals, lakes and rivers, are open on equal terms to ships of all countries, except for those taking part in the coastal trade.

Of growing importance among Canada's transportation systems are its modern airlines. Beginning in a small way in the 1920s with exploration flights to the northern bushlands and airmail flights on short runs, Canada's civil aviation industry today occupies an important position in the world of transportation.

Fast, powerful jet-liners of the two major lines—Air Canada, owned and operated as a Crown company, and CP Air, a subsidiary of the Canadian Pacific railway company—now carry passengers across the continent in from seven to eight hours. Some 12,000 registered civil aircraft operate in and out of approximately 1,600 airports, seaplane bases, "heliports" and military airfields. Canadian air-carriers transport some 11.6 million passengers and over 305,000 tons of freight yearly.

In addition to domestic lines and services, including many serving important northern routes, Canada's international airports serve as landing and departure bases for scores of foreign-operated lines. Montreal is the headquarters of the International Civil Aviation Organization and the International Air Transport Association—the world's two most important aviation bodies.

Newly added to the field of large-scale transportation in Canada are over 68,000 miles of oil and gas pipelines of varying diameter, snaking out from the western plains in all directions to feed crude oil to refineries as much as 2,000 miles from the source and carrying natural gas to industries and private homes across the continent.

The oil and gas pipelines were constructed mainly from 1950 on and carry their cargoes over the Rocky Mountains to the west coast, south into the United States and east to the industrial centres along the shores of the Great Lakes and the St. Lawrence River.

Roughly 2.0 million barrels of crude oil are moved each day by pipeline and an average of 3.1 billion cubic feet of natural gas are carried in the same way every year to provide energy for gas-utilities industries, which, in turn, distribute it to more than 1.8 million consumers, from New Brunswick to British Columbia.

RESEARCH AND DEVELOPMENT



Solar furnace
uses sun's rays
to create heats
like those of
atomic blasts

The organization of research in Canada is unique because of the country's enormous area and small and unevenly-distributed population. Furthermore, the fact that Canada borders three oceans and possesses vast northern regions makes it particularly fitted for many types of research.

Research in Canada is carried on at four levels: by the Federal Government, by provincial governments, by universities and by industry.

The federal departments that administer the development of natural resources have the longest history of scientific research. Some provincial governments have research councils that concentrate mainly on applied research directed toward the development of provincial resources and local industry.

In the federal sphere of research, many areas of science and technology, particularly those that aid the secondary industries, fall within the scope of the National Research Council, which was established in 1916. Beginning with three research divisions, in chemistry, physics and biology, the NRC has expanded to comprise ten divisions and two regional laboratories in science and engineering. Of 3,580 NRC employees, 830 are professional scientists and engineers.

Under federal jurisdiction also are Atomic Energy of Canada Ltd., the Defence Research Board, and the Medical Research Council. The Defence Research Board conducts investigations into materials, armaments, special weapons, telecommunications, aeronautics and Arctic problems. This Board, the NRC and the Medical Research Council make extensive financial grants to universities and university students.

Atomic Energy of Canada Ltd., a Crown company, is concerned with nuclear research and development, the design and construction of reactors for nuclear power, and the production of radioactive isotopes and associated equipment, such as cobalt-60 beam-therapy units for the treatment of cancer.



Experiment with plastic balls in NRC sound laboratory



The company's largest plant and laboratories are located at Chalk River, Ontario, where research is conducted by 480 professional scientists and engineers and 550 technicians. Research at Chalk River is principally concerned with atomic-nuclei structure and the generation of electricity by nuclear power.

Universities have, of recent years, greatly increased their research programs and facilities. Research conducted by universities and reported in professional journals is truly encyclopedic and reflects both a high degree of specialization and an extraordinary variety of interests. Financial support for university research comes from governments, industry and private foundations.

Canadian firms are today well aware of the value of research, and many companies, especially the larger ones, have substantial research establishments of their own.

Specialized research projects are varied. The Continental Shelf Project in the Arctic, which is at present the subject of intensive study, is expected to yield detailed and accurate information on the physical and chemical composition of the waters of the Arctic Ocean, the nature of the Shelf, and the behaviour of glaciers, sea-ice and climate in the recent geological past.

Canadian scientists also pay particular attention to the earth's magnetism, since Canada plays, as it were, the role of host to the Magnetic Pole. The Northern Lights (*aurora borealis*) are also related to the earth's magnetic field, and scientists are studying the electrical nature of the atmosphere, where the phenomenon is produced, by measuring the upper atmosphere with new rocket techniques.

Since the Canadian coast-line is one of the longest in the world, scientists are vigorously working on oceanographic research programs. Oceanographic measurements are made on cruises by specially-equipped ships and include the determination of ocean currents, water temperature and salinity and plankton content.

Geological research is important because the Canadian Shield is one of the most intricate and richest rock

formations on earth. The geological sciences have a long tradition in Canada and include not only mineral exploration but the dating of rocks by radioactive methods, etc. The origin of a number of very ancient so-called craters in Northern Canada is the subject of much study and debate.

There are also research programs in meteorology which involve the use of radar to study storm conditions and the use of rockets to forecast weather.

Aviation research to aid in opening up the North plays a leading role in developing aircraft with short take-off and landing characteristics. The Canadian-designed *Otter*, *Beaver* and *Caribou* aircraft are internationally known as being particularly well-suited to wilderness flying. Research engineers are now working on designing a reliable and economical vertical take-off and landing aircraft, thus foreshadowing the possibility of doing away with runways completely.

In addition to their participation in the above-mentioned research projects, the beneficial results of which are shared by many other countries, Canada's scientists play an important part in international research projects.

Canadian scientists took a significant part in the International Geophysical Year (IGY) and are also playing a similar role in the programs of the International Year of the Quiet Sun (IQSY), particularly in cosmic-ray studies in the World Magnetic Survey.

Canada collaborates very closely in atomic research with the United States, Britain and other countries. Canada and the U.S. also exchange technical data freely.

Most medical research is done by universities and affiliated hospitals and institutions. Outstanding contributions have been made to neuro-chemistry and bio-chemistry by the Montreal Neurological Institute at McGill University and by the Banting and Best Department of Research at the University of Toronto, both of which have international reputations. The Connaught

Medical Laboratories in Toronto and the Institute of Micro-biology in Montreal are well known for their studies of viruses. The Allan Memorial Institute in Montreal has established itself as a leader in research on mental illness.

EDUCATION AND THE ARTS

Education is compulsory in Canada to all children from the age of 6 to 14 or 16, depending on the provinces where they live, and is free until the completion of secondary-school studies. Most schools are co-educational, and vary in form from the one-room school-house to ultra-modern suburban structures.

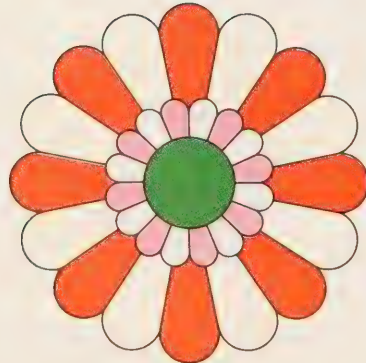
Under the terms of the British North America Act, responsibility for education is vested in the provinces. There is no federal department of education, but the ten provincial departments exercise exclusive jurisdiction over education in their respective provinces.

In some provinces separate schools are operated by Catholic or Protestant minorities. Relatively few students attend private schools; in the English-speaking provinces, the proportion is 2 per cent, and in Quebec 5 per cent.

In spite of the multiplicity of educational systems and authorities, co-operation has produced more uniformity than might be expected.

Canada has about 60 degree-granting universities with a full-time enrolment of 326,000 students. In addition, another 205,000 students are enrolled in teaching colleges, schools of nursing and community colleges. Some of these institutions receive provincial and federal grants; others are supported by religious denominations and private endowment.

Because university fees have risen in recent years, students often take part-time or summer employment. The Federal Government operates a Student Loans Act whereby a student may borrow up to \$5,000 during his undergraduate years or graduate years at a Canadian university or other institution of higher learning.



Some of the larger universities have more than 10,000 students and, with the rapidly-increasing enrolment, all face complex expansion and financial problems.

Canada has many excellent museums and art galleries. The National Museums of Canada, in Ottawa, is a departmental corporation established to administer four museum activities of the Federal Government: the National Gallery of Canada; the National Museum of Man (including the Canadian War Museum); the National Museum of Natural Sciences; and the National Museum of Science and Technology. The Royal Ontario Museum in Toronto is the country's largest museum of the arts and archaeology of man. Another institution of national stature is the Montreal Museum of Fine Arts. Besides these, there are numerous provincial art galleries, of both general and special interest, that are operated on a non-profit basis.

The Canada Council, a federal body created in 1957 to encourage the development of the arts, humanities and social sciences, has made considerable sums available to artists and artistic undertakings. Several of the provinces and many municipalities also provide financial aid to artistic enterprises.

The remarkable flowering of the arts in Canada in recent years has been due, among other influences, to the widespread interest in Canada's centennial, in preparation for which concert halls, theatres, cultural centres and conservatories have been built across the country.

The most magnificent of these came as a belated centennial event when the National Arts Centre opened in Ottawa in 1969. This \$46-million complex contains a 2,300-seat opera house, an 800-seat theatre, an experimental studio and a chamber-music salon. The Centre serves as a focal-point for touring Canadian artistic groups and for companies from abroad. It also provides resident attractions, including a 45-piece orchestra.

Theatre is flourishing in Canada. In addition to the many amateur groups, of which the six best compete each year in the Dominion Drama Festival, an increasing

Scene from *Richard II* at Stratford, Ontario





number of professional companies are performing in their home centres and on tour in Canada and abroad. These include the Neptune Theatre (Halifax), l'Estoc (Quebec), le Rideau Vert, la Comédie Canadienne and le Théâtre du Nouveau Monde (Montreal), Workshop Productions and Theatre Toronto (Toronto), the Manitoba Theatre Centre (Winnipeg), the Citadel (Edmonton) and the Vancouver Playhouse. The most important of the Canadian drama schools is the National Theatre School, which provides courses in both English and French and is held at Stratford, Ontario, during the summer and in Montreal during the rest of the year.

Quebec, Montreal, Toronto, Winnipeg, Edmonton and Vancouver have professional symphony orchestras; and the Atlantic Symphony Orchestra was founded in 1969, combining the Halifax and New Brunswick Orchestras. The Montreal and Toronto orchestras have represented Canada abroad with great success. Two chamber groups, the McGill Chamber Orchestra of Montreal and the Hart House Orchestra of Toronto, are well known in international musical circles. Most other Canadian cities have amateur symphony orchestras or chamber groups.

Interest in orchestral music is growing among young Canadians, and the National Youth Orchestra is highly regarded abroad. The summer camp of les Jeunesses Musicales at Mount Orford, Quebec, and the Banff School of Fine Arts are also developing young Canadian musicians.

Canada possesses three professional ballet companies of international repute—the Royal Winnipeg Ballet, the National Ballet of Canada (Toronto), and les Grands Ballets Canadiens. These companies are making an important contribution to the musical and artistic development of the nation.

Canada's leading opera companies are le Théâtre Lyrique de Nouvelle-France (Quebec), the Vancouver Opera Association and the Canadian Opera Company (Toronto). None of these companies, however, can

operate all year round. Operas are produced occasionally by other organizations, notably the Montreal Symphony Orchestra.

A number of music and drama festivals take place each year, the most famous of which is the Stratford Shakespearean Festival at Stratford, Ontario. Other noteworthy festivals are held annually at Montreal, Vancouver, Niagara-on-the-Lake, Ontario, and Guelph, Ontario.

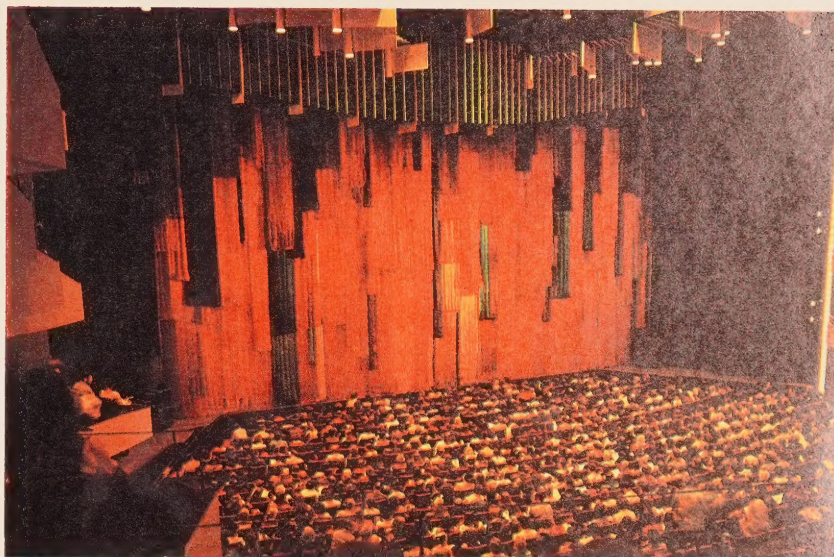
Canada's most original contribution to the arts has probably been in painting, which, from the pioneer work of the Group of Seven to that of numerous contemporary artists, has manifested a vigour hardly surpassed by the artistic output of any other nation of comparable size. Of first importance in providing a public and a market for Canadian painters and sculptors have been the purchasing and exhibiting policies of the National Gallery in Ottawa. The Federal Government also buys Canadian works of art for many of its buildings.

Since the Second World War, the literature of Canada has won international attention. Many literary prizes are won each year by Canadians. Besides the many books published in Canada, the works of numerous Canadian authors are now being published abroad.

The radio and television networks of the Canadian Broadcasting Corporation have performed an invaluable service not only in bringing the various Canadian arts before a national audience but also in producing original films and dramas designed specifically for broadcasting.

Montreal is the fourth-largest producer of television programs in the world, and is first in the production of French-language programs.

Like the CBC, private radio and the commercial television network (CTV) carry classical music and drama



Spectacular stage curtain of the Opera, National Arts Centre, Ottawa, designed by Micheline Beauchemin and woven in Japan

(Malak)

for that part of their audience that has no taste for a steady diet of light entertainment.

The contribution of the National Film Board to the popularizing of the arts has been only slightly smaller than that of the CBC, and its original productions have probably been more extensive.

RECREATION

Variety is the source of Canada's popularity with vacationers—variety of climate, of scenery, of people. The Canadian seasons come in different guises to different parts of the country, and arrive at different intervals.

To the greater part of Canada winter brings cold-weather sports and pastimes of all kinds—skiing, skating, curling and ice-hockey among others. Winter carnivals are popular, the biggest and best-known being that held each year in Quebec City. Sports fans who prefer the spectator's role are entertained by the finest professional hockey teams in the world.

In the late spring and summer, thousands of people move to cottages by lakes and streams, while other thousands swim, fish, sail, motor and golf. Later in the summer, Canada's second main spectator sport, gridiron football, opens its training season, for the next four months or so exerting a hypnotic spell over a large section of the population. Spring and summer are the seasons for open-air festivals and shows. Tourists in Montreal stroll through the Botanical Gardens; visitors to Nova Scotia attend the Annapolis Apple Blossom Festival; thousands of people from the United States and other countries flock to the Calgary Stampede, the greatest Wild West show on earth.

Autumn in Eastern Canada is a blazing tapestry of coloured leaves. From east to west, it is the season for hiking and colour photography, football and baseball, and fall fairs everywhere throughout the countryside.

Canada is a land bountifully endowed with natural playgrounds. The Federal Government maintains 24 national parks, most of them with camp-sites and other basic camping facilities, and each province maintains a number of similar parks. In addition, 75 national historic parks and sites are maintained by the Federal Government.



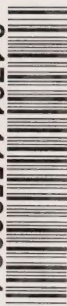
Professional football game at Regina, Saskatchewan (Vroom)

Chuck-wagon race, Calgary Stampede

(Vroom)



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